ABSTRACT

A method of determining formation density in a cased hole environment using a logging tool having a gamma ray source, a long spacing detector, and a short

5   spacing detector that includes developing one or more cased hole calibration relationships that utilize differences between scattered gamma rays observed by short spacing detectors and scattered gamma rays observed by long spacing detectors to determine corrected formation density values, and using the cased hole calibration relationships and scattered gamma ray measurements obtained by the long spacing

10   detector and the short spacing detector to determine the formation density. An associated article of manufacture and computerized well logging system are also described.